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(54) Title: MONOCYCLOPENTADIENYL COMPLEXES

(57) **Abstract:** Monocyclopentadienyl complexes in which the cyclopentadienyl system is substituted by at least one bridged donor, where the bridge contains at least one atom of group 14 of the Periodic Table and at least one atom of group 15 or 16 of the Periodic Table, and a catalyst system comprising at least one of the monocyclopentadienyl complexes, and also methods of preparing them, the use of the catalyst system for the polymerization or copolymerization of olefins and a process for preparing polyolefins by polymerization or copolymerization of olefins in the presence of the catalyst system and the preparation of the associated cyclopentadienyl system.